

Claim 1 (currently amended). In a Nautilus resistance exercising machine having a presettable resistance for use with a repetitive input of force exercise having an ascertainable parameter to the exercise other than the value of the resistance,

the improvement ~~[[of]]~~ comprising an altering mechanism to vary the preset weight resistance and a control box means to automatically selectively alter said altering mechanism in order to vary the effective resistance to retain the exercise within the ascertainable parameter.

Claim 2 (currently amended). The improved Nautilus resistance exercising machine of Claim 1 wherein the exercise utilizes repetitions each having a time per repetition and characterized in that the ascertainable parameter is time per repetition.

Claim 3 (currently amended). The improved Nautilus resistance exercising machine of Claim 1 characterized by the addition of means to impart an inertial quality to the selectably variable resistance.

Claim 4 (currently amended). The improved Nautilus resistance exercising machine of Claim 1 characterized in that said automatic adjustment means includes a generator.

Claim 5 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 1 characterized by the addition of means to separate the selectably variable resistance from direct mechanical connection to the exerciser.

Claim 6 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 1 characterized in that said automatic adjustment means includes an initial range adjustment sensor.

Claim 7 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 1 characterized in that each exerciser has a memory area associated therewith and said automatic adjustment means utilizes said memory area.

Claim 8 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of ~~Claim 1~~ Claim 7 characterized in that said memory area is on a card.

Claim 9 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 1 characterized in that there are a limited number of presettably weight resistances.

Claim 10 (currently amended). The improved ~~Nautilus~~
resistance exercising machine of Claim 9 characterized in that there
is a single presettable weight resistance.

Claim 11 (currently amended). The improved ~~Nautilus~~
resistance exercising machine of Claim 1 wherein the machine has
bidirectional forces and characterized in that said means is not
symmetric in respect to the bidirectional forces.

Claim 12 (currently amended). The improved ~~Nautilus~~
resistance exercising machine of Claim 11 characterized in that said
means substantially ~~eliminate~~ eliminates the resistance in one of
the bidirectional forces.

Claim 13 (currently amended). The improved ~~Nautilus~~
resistance exercising machine of Claim 1 characterized in that said
modifying means modifies the resistance based upon the time of
initial repetition and thereafter retains the resistance at a
constant level.

Claim 14 (currently amended). The improved ~~Nautilus~~
resistance exercising machine of Claim 1 characterized in that said
modifying means begins with a resistance too high for the particular
exerciser.

Claim 15 (currently amended). The improved Nautilus resistance exercising machine of Claim 1 characterized by the addition of the previous resistance for a particular exerciser being held in memory and in that said modifying means utilizes said previous resistance to begin the resistance for that particular exerciser.

Claim 16 (currently amended). The improved Nautilus resistance exercising machine of Claim 15 characterized in that said memory is on an exchangeable card.

Claim 17 (currently amended). The improved Nautilus resistance exercising machine of Claim 15 characterized in that said memory is in a computer.

Claim 18 (currently amended). The improved Nautilus resistance exercising machine of Claim 17 characterized by the addition of sensor means to identify the particular exerciser.

Claim 19 (currently amended). In a Nautilus resistance exercising machine having resistance for use with an exercise, the improvement of an inertial means to impart an inertial quality to the resistance.

Claim 20 (currently amended). The improved Nautilus resistance exercising machine of Claim 19 wherein the exercise is bidirectional having a forward and return stroke and characterized by the addition of means to provide a resistance during the return stroke.

Claim 21 (currently amended). The improved Nautilus resistance exercising machine of Claim 19 wherein the exercise has a time per repetition and characterized by the addition of a modifying means to modify the resistance based upon the time per repetition.

Claim 22 (currently amended). The improved Nautilus resistance exercising machine of Claim 21 wherein said modifying means lowers the resistance upon increasing time per repetition.

Claim 23 (currently amended). The improved Nautilus resistance exercising machine of Claim 21 characterized in that said modifying means modifies the resistance based upon the time of initial repetition and thereafter retains the resistance at a constant level.

Claim 24 (currently amended). The improved Nautilus resistance exercising machine of Claim 21 characterized in that said modifying means begins with a resistance too high for the particular exerciser.

Claim 25 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 21 characterized by the addition of the previous resistance for a particular exerciser being held in memory and in that said modifying means utilizes said previous resistance to begin the resistance for that particular exerciser.

Claim 26 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 25 characterized in that said memory is on an exchangeable card.

Claim 27 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 25 characterized in that said memory is in a computer.

Claim 28 (currently amended). The improved ~~Nautilus~~ resistance exercising machine of Claim 27 characterized by the addition of sensor means to identify the particular exerciser.

Claim 29 (currently amended). In an exercise machine having a selectably variable resistance for use with an exercise having an ascertainable parameter,

~~the-improvement-of~~ an improvement comprising a means to automatically adjust the selectably variable resistance in order to retain the exercise within the ascertainable parameter.

Claim 30 (previously presented). The exercise machine of Claim 29 wherein the exercise utilizes repetitions and characterized in that the ascertainable parameter is time per repetition.

Claim 31 (previously presented). The exercise machine of Claim 29 characterized by the addition of means to impart an inertial quality to the selectably variable resistance.

Claim 32 (previously presented). The exercise machine of Claim 29 characterized in that said automatic adjustment means includes a generator.

Claim 33 (previously presented). The exercise machine of Claim 29 characterized by the addition of means to separate the selectably variable resistance from direct mechanical connection to the exerciser.

Claim 34 (previously presented). The exercise machine of Claim 29 characterized in that said automatic adjustment means includes an initial range adjustment sensor.

Claim 35 (previously presented). The exercise machine of Claim 29 characterized in that each exerciser has a memory area associated therewith and said automatic adjustment means utilizes said memory area.

Claim 36 (previously presented). The exercise machine of Claim 35 characterized in that said memory area is on a card.

Claim 37 (currently amended). The exercise machine of Claim 29 wherein the selectably variable resistance is a presettable ~~Nautilus-type~~ physical weight pack and characterized in that said automatic adjustment means include a means to override the presettable weight pack.

Claim 38 (previously presented). The exercise machine of Claim 37 wherein the machine has bidirectional forces thereon and characterized in that said override means are not symmetric in respect to the bidirectional forces.

Claim 39 (previously presented). The exercise machine of Claim 38 characterized in that said override means substantially eliminate the resistance in one of the bidirectional forces.

Claim 40 (previously presented). The exercise machine of Claim 29 characterized in that the setting of the parameter optimizes the exercise.

Claim 41 (previously presented). The exercise machine of Claim 40 characterized in that the parameter is ascertained empirically.

Claim 42 (previously presented). The exercise machine of 40 characterized in that the parameter is ascertained theoretically.

Claim 43 (previously presented). The exercise machine of claim 29 wherein the exercise has multiple parameters and characterized in that the means optimizes the exercise in respect to the multiple parameters.

Claim 44 (previously presented). The exercise machine of Claim 43 characterized in that the parameters vary during the duration of the exercise.

Claim 45 (previously presented). In an exercising machine for performing an exercise having a desired parameter, the improvement of an analog readout and said analog readout indicating the degree of deviance from the desired parameter.

Claim 46 (previously presented). The exercising machine of Claim 45 characterized in that said analog readout is a tone with said tone varying depending on the degree of deviance.

Claim 47 (previously presented). The exercising machine of Claim 45 characterized in that said analog readout is a string of lights.

Claim 48 (previously presented). The exercising machine of Claim 45 wherein the exercise machine has a resistance and characterized by the addition of a means to automatically vary the resistance to meet the desired parameter if the exercise deviates therefrom by a certain predetermined amount.

Claim 49 (currently amended). In a Nautilus resistance exercise machine having a presettable weight resistance for use with an exercise, ~~the-improvement-of~~ an improvement comprising means to alter the resistance during the exercise.

Claim 50 (currently amended). The Nautilus resistance exercise machine of Claim 49 characterized in that said means is programmed with preset values of alteration.

Claim 51 (currently amended). The Nautilus resistance exercise machine of Claim 49 characterized in that said means is individually set with values of alteration.

Claim 52 (currently amended). The Nautilus resistance exercise machine of Claim 49 wherein the exercise has a parameter and characterized in that the means alters the resistance to override the machine should the exercise deviate significantly from the parameter.

Claim 53 (currently amended). The ~~Nautilus~~ resistance exercise machine of claim 49 wherein the exercise has desired parameters and characterized in that said means varies the resistance in order to keep the exercise within the desired parameters.

Claim 54 (new). A resistance exercise machine for use with an exercise having a repetitive input of force on an input shaft, the machine comprising an input generator, the input shaft being drivingly connected to the input generator, said input generator having an electric output upon the input of force on the input shaft,

a load, said electric output of said generator powering said load, a control circuit and means for said control circuit to impart a varying perceived resistance to the input shaft.

Claim 55 (new). The machine of claim 54 characterized in that said means for said control circuit to impart a varying perceived resistance to the input shaft includes a feedback motor and said feedback motor being connected to the input shaft.

Claim 56 (new). The machine of claim 55 characterized in that said feedback motor is unitary with said generator.

Claim 57 (new). The machine of claim 54 characterized in that said load includes a motor, said motor having an output, a motor load, and said output of said motor being connected to said motor load.

Claim 58 (new). The machine of claim 54 wherein the machine is utilized by an exerciser having a certain characteristic and characterized by the addition of a sensor, said sensor sensing the certain characteristic of the exerciser, said sensor being connected to said control circuit and said control circuit varying the perceived resistance to the exerciser based on the certain characteristic.

Claim 59 (new). The machine of claim 54 characterized by the addition of a direct mechanical connection between the input shaft and the load.